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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,236	12/28/2001	Philip J. Ireland	11675.99.2	9992

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EXAMINER

TSAI, H JEY

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,236

Applicant(s)

IRELAND ET AL.

Examiner

H.Jey Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-42 is/are allowed.
- 6) ☒ Claim(s) 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Terminal disclaimer filed on July 1, 2005 has been approved.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 43 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. "forming a contact hole through the capacitor storage node" is not described in the specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 43 is rejected under 35 U.S.C. § 102(e) as being anticipated by Gardner et al., 5,973,910, cited by applicants.

Gardner method of fabricating an integrated circuit that includes a

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semiconductor substrate 100 having an active region 100 therein, a capacitor storage node 102 upon the active region 100, a capacitor dielectric layer 103 upon the capacitor storage node 102, a cell plate conductor layer 104 upon the capacitor dielectric layer 103, a cell plate insulator layer 105 upon the cell plate conductor layer 104, the method comprising:

forming a contact hole extending through the cell plate insulator layer 105, the cell plate conductor layer 104, the capacitor dielectric layer 103, and the capacitor storage node 102 to terminate at the active region, 100, fig. 1A-1B and col. 3, line 33 to col. 4, line 67,

forming a sleeve insulator layer 107 within the contact hole, the sleeve insulator layer extending from a terminus at an interface between the cell plate insulator layer 105 and an opposite terminus that is below the capacitor dielectric layer 103 and above the semiconductor substrate¹, fig. 1E,

forming an electrically conductive plug extending through the sleeve insulator layer to make contact with the active region and the capacitor storage node, the electrically conductive plug being electrically insulated from the cell plate conductor layer by the sleeve insulator layer.

Allowable Subject Matter

Claims 1-42 are allowable over the prior art of record for the reason of forming an opening terminating at a bottom surface within the lower bulk insulator layer and the

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thickness of the upper bulk insulator layer is greater than the thickness of the cell plate insulator layer.

Conclusions

Terminal disclaimed filed on July 1, 2005 has been approved.

Gardner clearly teaches forming a contact hole extending through the cell plate insulator layer, the cell plate conductor layer, the capacitor dielectric layer, and the capacitor storage node to terminate at the active region, forming a sleeve insulator layer within the contact hole, the sleeve insulator layer extending from a terminus at an interface between the cell plate insulator layer and an opposite terminus that is below the capacitor dielectric layer and above the substrate as set forth above.

Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is (703) 308-4357.

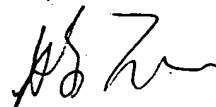
Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (571) 272-1684. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873.

The fax phone number for this Group is (703) 872-9306.

hjt

7/16/2005



H. Jey Tsai
Primary Examiner
Patent Examining Group 2800